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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,325	10/29/2003	Xianlong Luo	9896-000010	6551
27572 7590 07/19/2007 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER SIKRI, ANISH	
			ART UNIT 2143	PAPER NUMBER
			MAIL DATE 07/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/696,325	Applicant(s) LUO, XIANLONG	
	Examiner Anish Sikri	Art Unit 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 02150111.4, filed on 11/02/2002.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 6 is rejected under 35 U.S.C. 102(b) as being unpatentable over Zinin et al (US Pat 6,820,134).

Consider **Claim 1** Zinin et al clearly discloses the method for calculating constrained paths for a transmission network, comprising: a. respectively collecting attribute information of the link to which each node is connected and obtaining the information of the protect entity to which the link belongs (Zinin et al, Col 2, Lines 12-20, Lines 34-40, Col 3, Lines 31-42); b. flooding the collected attribute information to other nodes according to a protocol (Zinin et al, Col 3, Lines 52-55); c. combining each node according to the information of the protection entities to which each link respectively belongs and forming the topology structure of each protection entity of whole network and related link attribute information (Zinin et al, Col 7 Lines 20-31); and d. calculating constrained paths for the transmission network (Zinin et al, Col 5, Lines 46-58). The

invention clearly shows on how the best paths for transmission is calculated by collecting the attributes of nodes via their links, along with flooding the links to the nodes if more than one best link is available, in order to further determine the best link possible. The collected information between the links and their nodes is maintained by various data structures by the router(s).

Consider **Claim 2**, Zinin et al clearly discloses the method of claim 1, Step a further comprising the step of obtaining the usable bandwidth of link (Zinin et al, Col 4 Lines 25-27), the protection capability of link (Zinin et al, Col 6, Lines 31-49), the local interface IP address and the remote interface IP address of link (Zinin et al, Col 5 Lines 25-26, Lines 55-56, Lines 63-67, Col 1-5). It is clearly disclosed that bandwidth, reliability and IP addresses is maintained by the router to ensure proper communication/transmission in the network.

Consider **Claim 5**, Zinin et al clearly discloses the method of claim 1, wherein said protocol in Step b is the Open Shortest Path First (OSPF) protocol (Zinin et al, Col 4 Lines 25-26). It clearly shows that the network will use the OSPF protocol for communication/transmission.

Consider **Claim 6**, Zinin et al clearly discloses the method of claim 1, wherein flooding the collected attribute information to other nodes according to a protocol in Step

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b (Zinin et al, Col 3, Lines 52-55) is through the packets of Link State Advertisement (LSA) (Zinin et al, Col 7, Lines 20-24). It is clearly discloses that the flooding will be conducted with the use of a LSA.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinin et al (US Pat 6,820,134), in view of Saleh (US Pat 7,002,917).

Consider **Claim 3**, Zinin et al clearly discloses the method of claim 2, collecting attribute information of the link to which each node is connected in Step a (Zinin et al, Col 2, Lines 12-20, Lines 34-40, Col 3, Lines 31-42).

But Zinin et al fails to disclose the step of interrogating the user configuration information of optical network devices through a specific software interface.

Nonetheless, Saleh discloses the step of interrogating the user configuration information of optical network devices (Saleh, Col 1, Lines 66-65) through a specific software interface (Saleh, Col 7, Lines 35-39). Therefore, it would be obvious to a person of ordinary skill in the art at the time of the invention was made to allow the use of a user to configure, taught by Saleh, to configure the optical network, for the purpose of maintaining the optical network., in the invention of Zinin et al.

Consider **Claim 4**, Zinin et al clearly discloses the method of claim 1, collecting attribute information of the link to which each node is connected in Step a (Zinin et al, Col 2, Lines 12-20, Lines 34-40, Col 3, Lines 31-42).

But Zinin et al fails to disclose the step of interrogating the user configuration information of optical network devices through a specific software interface.

Nonetheless, Saleh discloses the step of interrogating the user configuration information of optical network devices (Saleh, Col 1, Lines 66-65) through

a specific software interface (Saleh, Col 7, Lines 35-39). Therefore, it would be obvious to a person of ordinary skill in the art at the time of the invention was made to allow the use of a user to configure, taught by Saleh, to configure the optical network, for the purpose of maintaining the optical network, in the invention of Zinin et al.

Claims 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinin et al (US Pat 6,820,134), in view of Houston et al (US Pub 2003/0126284).

Consider **Claim 7**, Zinin et al fails to disclose the method of claim 1, wherein Step d comprises: d1. establishing PATHS for storing the information of the shortest path tree and TENT for storing the information of tentative nodes which have been attempted before finding the shorted path; d2. putting the node doing the calculation on PATHS, and pre-loading TENT from the local adjacency database; d3. examining links from the node to each of its neighbor nodes when putting the node on PATHS, if a neighbor node is already in PATHS, then ignoring this new way because it is longer; if a neighbor node is in TENT and the new path is shorter, replacing the old path with the new one; if the new path is the same length as the one in TENT, then the neighbor node having an equivalent path; if a neighbor node is not in TENT, then deleting links and nodes that do not satisfy the LSP constraint conditions and putting nodes respectively corresponding to links which satisfy the LSP constraint conditions on TENT; d4. putting

the nodes with least-cost from TENT to PATHS; and d5. ending the routing calculating until TENT is empty or the destination node is already existed in PATHS

Nonetheless, Houston et al clearly discloses the method of claim 1, wherein Step d comprises: d1. establishing PATHS for storing the information of the shortest path tree and TENT for storing the information of tentative nodes which have been attempted before finding the shorted path (Houston et al, Page 3, [0039]); d2. putting the node doing the calculation on PATHS, and pre-loading TENT from the local adjacency database (Houston et al, Page 3, [0040]); d3. examining links from the node to each of its neighbor nodes when putting the node on PATHS (Houston et al, Page 4-Page 5 [0051]), if a neighbor node is already in PATHS (Houston et al, Page 4-Page 5 [0051]), then ignoring this new way because it is longer (Houston et al, Page 4-Page 5 [0051]); if a neighbor node is in TENT and the new path is shorter (Houston et al, Page 4-Page 5 [0051]), replacing the old path with the new one (Houston et al, Page 4-Page 5 [0051]); if the new path is the same length as the one in TENT (Houston et al, Page 4-Page 5 [0051]), then the neighbor node having an equivalent path (Houston et al, Page 4-Page 5 [0051]); if a neighbor node is not in TENT (Houston et al, Page 4-Page 5 [0051]), then deleting links and nodes that do not satisfy the LSP constraint conditions and putting nodes respectively corresponding to links which satisfy the LSP constraint conditions on TENT (Houston et al, Page 4-Page 5 [0051]); d4. putting the nodes with least-cost from TENT to PATHS (Houston et al, Page 5 [0054]); and d5. ending the routing calculating until TENT is empty or the destination node is already existed in PATHS (Houston et al, Page 6 [0059]).

Therefore, it would be obvious to a person of ordinary skill in the art at the time of the invention was made to allow the use PATHS for storing the information of the shortest path tree and TENT for storing the information of nodes, taught by Houston et al, in the invention of Zinin et al for the purpose of finding the best shortest path between nodes for creating an efficient transmission path.

Claims 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinin et al (US Pat 6,820,134), in view of Houston et al (US Pub 2003/0126284), and further in in view of Goertz (US Pat 4,755,991), and Saleh (US Pat 7,002,917).

Consider **Claim 8**, Zinin et al, in view of Houston et al, discloses the method of claim 7, further comprising the steps of: d6. selecting the most appropriate path according to a policy if equal-cost paths exist (Houston et al, Page 4-Page 5 [0051]);

But Zinin et al, in view of Houston et al, fails to disclose d7. allocating a congruent time-slot to all nodes on this multiplex section protection (MSP) ring if the service passes a MSP ring.

Nonetheless, Goertz discloses d7. allocating a congruent time-slot to all nodes on this multiplex section protection (MSP) ring if the service passes a MSP ring (Goertz, Col 1, Lines 65-68, Col 2 Lines 1-5).

But Zinin et al, in view of Houston et al fails to disclose the step d8. if it is necessary to output protection paths simultaneously, outputting the protection paths based on the SDH/SONET protection topology according to the features of protection ring.

Nonetheless, Saleh clearly discloses the step d8. if it is necessary to output protection paths simultaneously, outputting the protection paths (Saleh, Col 27, lines 25-41) based on the SDH/SONET (Saleh, Col 5, Lines 31-32) protection topology according to the features of protection ring (Saleh, Col 27, lines 25-41).

Therefore, it would be obvious to a person of ordinary skill in the art at the time of the invention was made to allow the use of time-slots with a multiplexer, taught by Goertz, for use in a SDH/SONET network, taught by Saleh, for the purpose of increasing optimal paths between nodes and enabling faster communications to prevent time related delays in the invention taught by Zinin et al, in view of Houston et al.

Claims 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinin et al (US Pat 6,820,134), in view of Houston et al (US Pub 2003/0126284), in further view of Goertz (US Pat 4,755,991), and in further view of Jones et al (US Pat 4,633,246).

Consider **Claim 9**, Zinin et al, in view of Houston et al, fails to disclose method of claim 7, Step d3 further comprising: if the protection of 1:1 type is required, calculating

the protection path based on the MSP protection ring or MSP protection link, wherein the nodes which can be put on TENT may be the nodes on the MSP protection ring or MSP protection link; and when passing through the protection ring, putting all the nodes that satisfy service constraint conditions and protection requirements on the protection ring on TENT.

But, Zinin et al, in view of Houston et al does disclose the use of TENTS (Houston et al, Page 4-Page 5 [0051]).

Nonetheless, Jones et al teaches the step Step d3 further comprising: if the protection of 1:1 type is required (Jones et al, Col 1 Lines 65-68, Col 2 Lines 1-3).

And, Goertz discloses the calculating the protection path based on the MSP protection ring or MSP protection link ring (Goertz, Col 1, Lines 65-68, Col 2 Lines 1-5), wherein the nodes, which can be put on TENT, may be the nodes on the MSP protection ring or MSP protection link ring (Goertz, Col 1, Lines 65-68, Col 2 Lines 1-5).

Therefore, it would be obvious to a person of ordinary skill in the art at the time of the invention was made to allow the use TENTS on the network, taught by Houston et al, to be used in conjunction with having 1:1 type network protection, taught by Jones et al, for calculating the protection path based on the multiplexer ring, taught by Goertz, in the invention taught by Zinin et al, for the purpose of increasing optimal paths between nodes and enabling faster communications to prevent time related delays.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Sikri whose telephone number is 571-270-1783. The examiner can normally be reached on 8am - 5pm Monday - Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anish Sikri

AS

June 20, 2007


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